17. Explain in detail about the primary, secondary, tertiary and quaternary structures of protein.

18. Write in detail about the Organization of the nervous system.

19. (a) How does Gamma radiation affect the molecular system, nucleic acids and membranes? Explain in detail.

    (b) Also explain in brief about the radiation effects on cells and organelles.

20. Define – Chromatography and its types. Analyse the various chromatography techniques in detail and their usefulness in biological applications.

NOVEMBER/DECEMBER 2023

23PEPH15A — BIO PHYSICS

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions

1. Differentiate between Prokaryotic and Eukaryotic cells.

2. List the function of the neuronal cell?

3. Write the main differences in RNA and DNA structure.

4. Define – amino acids?

5. What does membrane capacitance indicate to us?

6. How does Nernst equation utilise in calculating the membrane potential?

7. Name some X-ray effects on bio-macromolecules.

8. What are known as Radiation Hazards?

9. Give at least two biological applications of ESR.

10. What is electrophoresis?

LIBRARY

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions

11. (a) Discuss briefly about the Molecular Mechanisms of vesicular traffic.

Or

(b) Analyse in detail about the different electrical activities of Cardiac and Neuronal cells.

12. (a) What are nucleotides and nucleosides? Give examples for each and Write the differences between them in detail.

Or

(b) Write a note on "Special Bio-Macromolecules".

13. (a) What is a biological membrane? Give examples of it? Give examples of it? Tell where it is located and also about the role of biological membrane.

Or

(b) How does membrane potential originate and write a short note on membrane potential.

14. (a) Evaluate various radiation protection methods in case of any radiation hazards happening in a workplace.

Or

(b) Elaborate the use of radiation in cancers.

15. (a) Write the working principle and application of UV – Visible absorption spectrometry.

Or

(b) Discuss in detail about the various centrifugation techniques.

SECTION C — (3 × 10 = 30 marks)

Answer Any THREE questions

LIBRARY

16. Write in detail about the following

(a) different architectures of cells

(b) Life cycles of cells

(c) Organelles of cells

(d) Cell size and shape